



From this...



To this...

I-90 Sunset Way Interchange

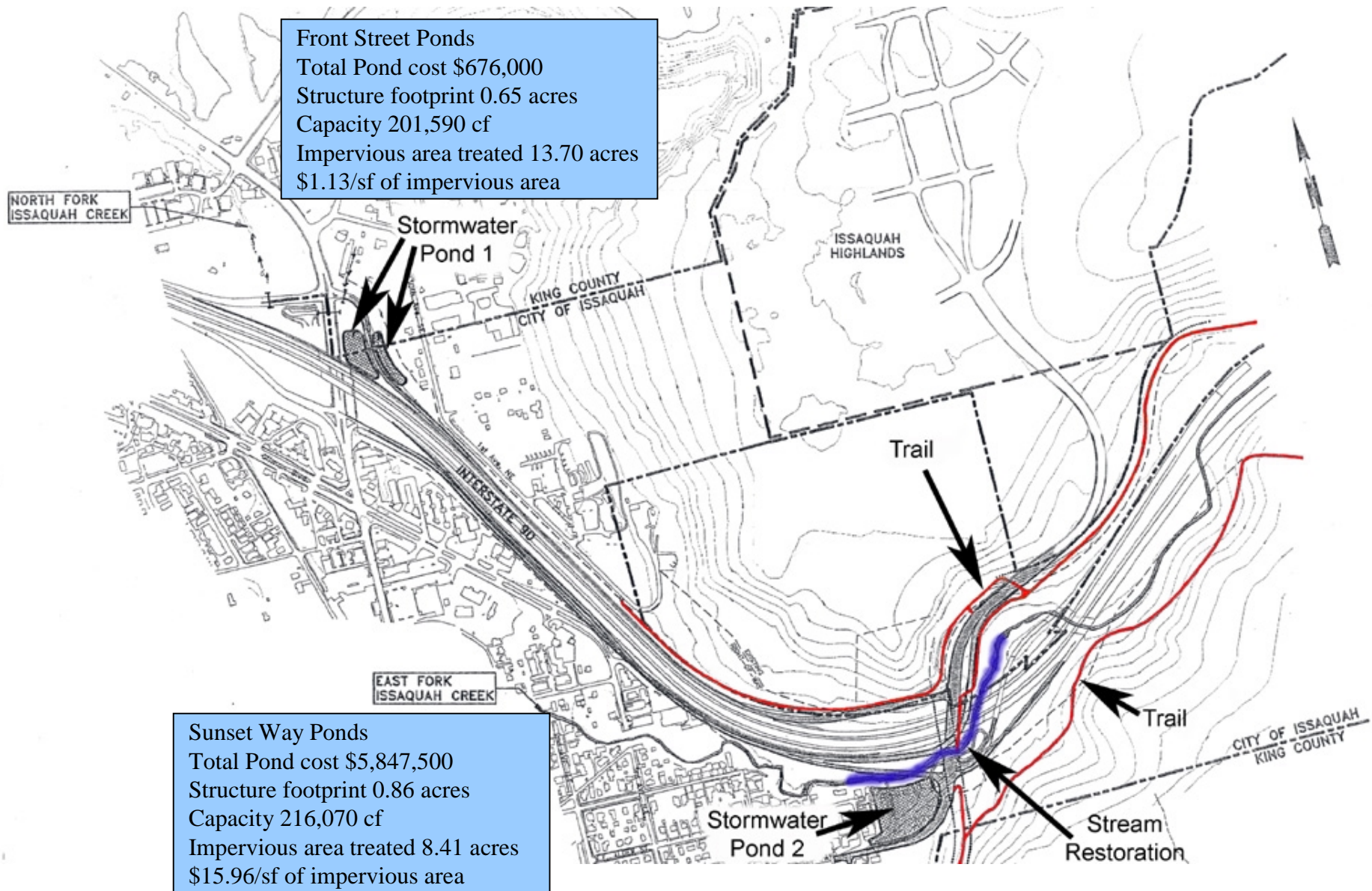
This project is located within the Mountains to Sound Greenway, a National Scenic Byway. The project will improve traffic in the Issaquah area by reducing congestion from nearby city and county streets and Front Street at I-90. The total project length is 1.5 miles.

Several public and private partners have come together to fund and build the interchange and associated projects. They include WSDOT, FHWA, the City of Issaquah, King County, Sound Transit, the Transportation Improvement Board, Port Blakely Communities, and state and federal agencies.

The project will add 12.84 acres of new impervious surface, including new bridges, on ramps and off ramps, and a bicycle and pedestrian trail. The total project cost is \$112,000,000.

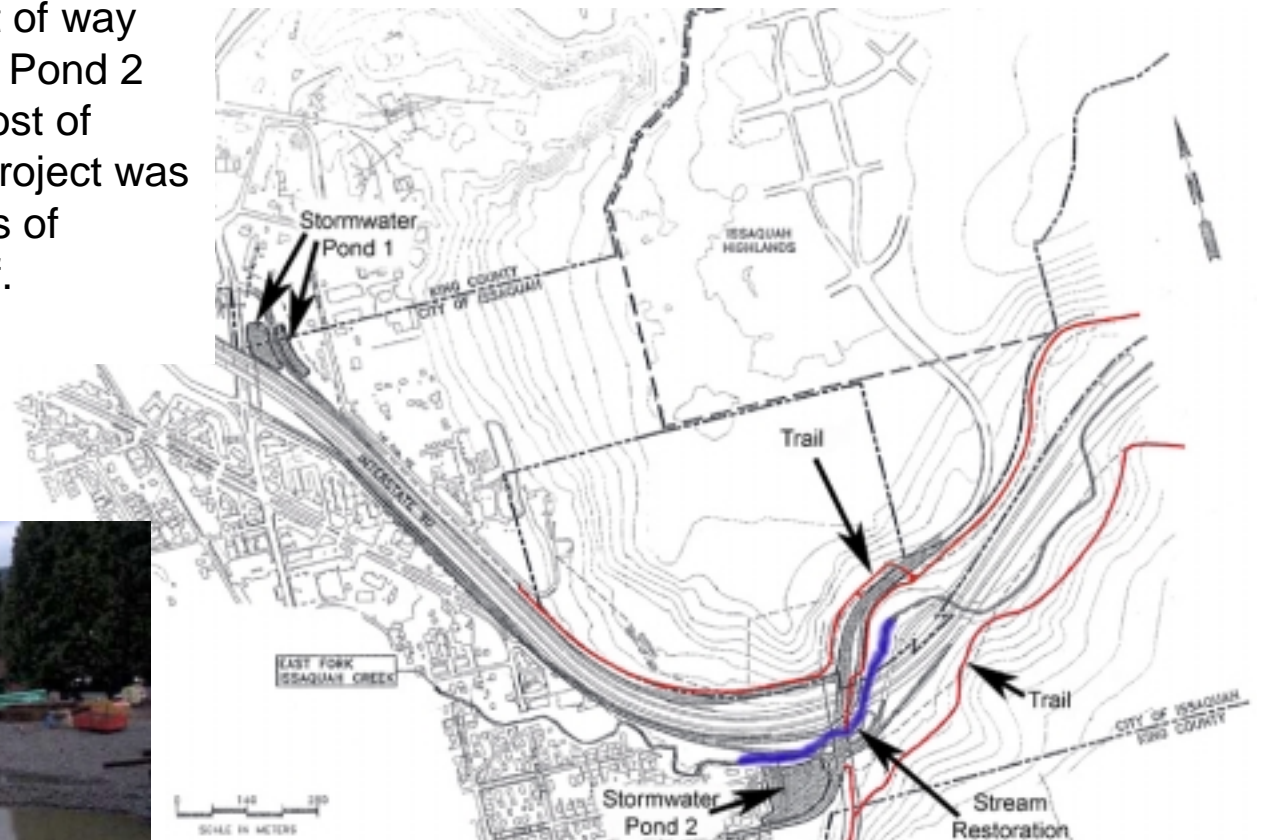
I-90 Sunset Way Interchange

New bridge, ramps, and intersections. Stormwater treatment, wetland mitigation, stream restoration, and trails incorporated into permits, design, and construction.



I-90 Sunset Way Interchange Stormwater Treatment

Two stormwater ponds were constructed for this project. Extensive right of way was purchased for Stormwater Pond 2 along Sunset Way. The total cost of stormwater treatment for this project was \$6,523,500 to treat 22.11 acres of impervious surface, or \$6.77/sf.



I-90 Sunset Way Interchange Issaquah Creek



Issaquah Creek before restoration



Issaquah Creek runs through the middle of the project. The riparian areas along the creek that were disturbed by construction will be restored with natural vegetation. The total cost for stream restoration is \$1,014,000.

Restoration is scheduled to begin during low water flows (the “fish window”) in summer 2003.

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Sediment Control

Fine, silty soils are encountered throughout the project site. Mixed with water, they create a muddy mess that never settles. Because of this, the construction run-off is hard to clean. Costly measures have been implemented to protect the creek water. Among these are a sand filtration system, stormwater ponds, a continuous pumping system, and a series of check dams. These dams are used throughout the project site for sedimentation control.

Stormwater ponds



Check dams



Removing sediment from the bottom of the pond is an elaborate and expensive operation. In this location, infiltration is the only way to manage the construction run-off and prevent it from entering the creek. The laborers below are vacuuming out the settled material, which is then hauled away.

Removing sediment



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Stormwater and Sediment Control



The pump above is located at one of the low points on the job site. Untreated water (muddy water) needs to be pumped to a sediment pond up the hill, or to the Chitosan Sand Filtration System to the west of this area. Thousands of gallons a day are pumped from this site.

After the pump mixes the dirty water with chitosan at the bottom of the pond, the fine, silty particles stick together and are easier to catch in the sand filter. The filter system below consists of four containers filled with quartz sand, which is periodically being flushed to remove the collected silt. The white container on the left holds the chitosan. A small pump brings the coagulant to the submersible pump in the pond.



A submersible pump in the pond (left) mixes dirty water with chitosan (a coagulant derived from crab shells) and sends the mix through a sand filter. Treated water is then infiltrated into the ground. The pipe releasing the water is used to calibrate the system. The other blue pipe carries the treated water up to an infiltration field where it is released. This improves the quality of the water by 99.7 percent. The total cost of sediment control during construction is estimated at \$2,280,000.

I-90 Sunset Way Interchange Wetland Mitigation



Impacts	Mitigation
0.15 acres of wetland	0.30 acres of wetland creation
	0.17 acres of wetland enhancement
1.40 acres of buffer	1.40 acres of buffer enhancement

Due to unavoidable wetland impacts, the project included a wetland mitigation site. The photo to the left shows the mitigation site before mitigation. The photo below, of the new wetland mitigation site, is taken from the same location. The total cost for wetland mitigation is \$1,591,500.



I-90 Sunset Way Interchange Slope Stability, Visual Mitigation



Limited right of way, multimodal access, steep slopes, and visual impacts all challenged project designers. The Environmental Impact Statement identified patterned retaining walls as a way to accommodate these project needs. This project is located within the Mountains to Sound Greenway, a National Scenic Byway, where visual impacts are critical.

I-90 Sunset Way Interchange Mitigation Costs

Phase Costs	
Preliminary Engineering	\$13.73M
Right of Way	\$10.91M
Construction	\$54.18M
Total	\$112.80M
construction.	

Mitigation Costs			
Mitigation Elements	Const. Costs ⁽¹⁾	Total Project Costs ^(*)	% of Total Project Cost
Stormwater Treatment	\$0.845M	\$6.52M	6.0%
Wetland Mitigation	\$0.46M	\$1.59M	1.0%
Stream Restoration	\$0.78M	\$1.01M	1.0%
Wall and Barrier Finish	\$0.40M	\$0.52M	0.5%
Architectural Girders	\$1.50M	\$1.95M	1.7%
Temporary Erosion and Sediment Control	\$1.75M	2.28M	2.0%
Subtotal of All Mitigation Items		***\$13.87M	12.0%
All other items		\$98.93M	
Total		\$112.80M	

⁽¹⁾ Construction cost includes mobilization, sales tax, and construction engineering.

** Does not include cost of approximately \$2.28M for bicycle and pedestrian into base transportation facilities of the project

^(*) All-in cost includes allocation, preliminary engineering, and right of way added to construction cost.

8.2%



Stormwater treatment costs for ponds
\$6.56M

2.0%



Wetland mitigation
\$1.59M

2.9%



Sediment treatment costs for
ponds \$2.28M